Data Dictionary

Washington Department of Natural Resources
1:24,000-scale Preliminary Fish Habitat Water Type Map Database
For Western Washington
July 1, 2004

This Draft information is provided as a preview of the Preliminary Fish Habitat Water Type Map. It is not intended as a substitute for the DNR HYDRO database currently used for regulatory purposes on Activity Maps within the Forest Practices Application and Review System (FPARS).

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SPATIAL EXTENT:
Western Washington. Generally defined as that area of the State of Washington west of the crest of the Cascade Mountains.

MAP PROJECTION:
Lambert Conformal Conic
NAD_1983_HARN_StatePlane_Washington_South_FIPS_4602_Feet

COVERAGES:
All files are in ARC/INFO™ version 8.3 format

WC — *The Watercourse* layer consists of stream, canal, flume, pipeline and other linear hydrographic feature centerlines. Where these features (especially streams) are represented as double lined features at the source scale they will be represented in this layer by their centerline. Streams that flow through water bodies such as lakes and reservoirs will also be represented by a centerline. All arcs point downstream.

WBWS — *The Water Body/Water Shoreline)* layer consists of sounds, bays, lakes, ponds, wet areas, reservoirs, inundation areas, the double lined portions of streams and other hydrographic features best represented as areas.

COVERAGE STRUCTURE QUICK REFERENCE

WC (arc coverage)

DATAFILE NAME: **WC.AAT** 07/01/2004
40 ITEMS: STARTING IN POSITION 1

COL	ITEM NAME	WDTH	OPUT	TYP	N.DEC	
1	FNODE#	4	5	B	-	
5	TNODE#	4	5	B	-	
9	LPOLY#	4	5	B	-	
13	RPOLY#	4	5	B	-	
17	LENGTH	8	18	F	5	
25	WC#	4	5	B	-	
29	WC-ID	4	5	B	-	
33	WC_LLID_NR	13	13	C	-	*Watercourse longitude/latitude identifier number*
62	WC_HYDR_FTR_CD	2	2	C	-	*Watercourse hydrographic feature code*
68	WC_LN_TYPE_CD	2	2	I	-	*Watercourse line type code*
72	WC_GNIS_NM	50	50	C	-	*Watercourse GNIS (Geographic Names Information System) name*
249	FP_WTRTY_1975_CD	1	1	I	-	*Forest Practices water type 1975 code (Current Water Type Code)*
250	FP_WTRTY_1975_DT	8	8	D	-	*Forest Practices water type 1975 date (Current Water Type Date)*

215	FP_WTRTY_CD	1	1	C	- *Forest Practices Fish Habitat Water Type Code*
247	FP_MDLEXPL_CD	2	2	c	- *Forest Practices model explanation code*

WBWS (Network coverage containing both arc (.AAT) and polygon (.PAT) attribution)

DATAFILE NAME: **WBWS.AAT** 07/01/2004
33 ITEMS: STARTING IN POSITION 1

COL	ITEM NAME	WDTH	OPUT	TYP	N.DEC
1	FNODE	4	5	B	-
5	TNODE#	4	5	B	-
9	LPOLY#	4	5	B	-
13	RPOLY#	4	5	B	-
17	LENGTH	8	18	F	5
25	WBWS#	4	5	B	-
29	WBWS-ID	4	5	B	-
152	FP_WTRTY_1975_CD	1	1	I	- *Forest Practices water type 1975 code (Current Water Type Code)*
153	FP_WTRTY_1975_DT	8	8	D	- *Forest Practices water type 1975 date (Current Water Type Date)*

DATAFILE NAME: **WBWS.PAT** 07/01/2004
11 ITEMS: STARTING IN POSITION 1

COL	ITEM NAME	WDTH	OPUT	TYP	N.DEC
1	AREA	8	1	F	5
9	PERIMETER	8	18	F	5
17	WBWS#	4	5	B	-
21	WBWS-ID	4	5	B	-
25	WBWS_LLID_NR	13	13	C	- *Water body longitude/latitude identifier number*
38	WBWS_HYDR_FTR_CD	2	2	C	- *Water body hydrographic feature code*
44	WBWS_GNIS_NM	50	50	C	- *Watercourse GNIS (Geographic Names Information System) name*
215	FP_WTRTY_CD	1	1	C	- *Forest Practices Fish Habitat Water Type Code (Not Modeled)*

Detailed Item Descriptions

WC.AAT

FNODE#
Arc from node internal number

TNODE#
Arc to node internal number

LPOLY#
Internal identifier of polygon to left of arc.

RPOLY#
Internal identifier of polygon to right of arc.

LENGTH
Arc length, units in Feet.

WC#

Arc internal number, software assigned.

WC-ID

Arc identifier assigned by user. This item is not used nor is it changed. Presence required by the software.

WC_LLID_NR

Watercourse longitude/latitude identifier number. The 13-character longitude/latitude derived unique watercourse route identifier (this is also known as LLID.) The identifier is based on position of the downstream point (mouth) of the watercourse. The identifier code is composed by concatenating the decimal degree values (to four places of precision) of the coordinates (minus the decimal points). LLID numbers are not unique across the four coverages.

There is no valid default value for this field and it must be populated.

Example: 1215613480987

WC_HYDR_FTR_CD

Watercourse hydrographic feature code. The code used to describe the hydrographic feature type that the watercourse represents.

Example: ST

These codes can be found in the **hydr_ftr_cd** lookup table listed at the end of this document.

WC_LN_TYPE_CD

Watercourse line type code. The type of watercourse feature that is represented in the database. Code used to differentiate the primary cartographic function of the lines regardless of the hydrographic feature or hydrologic function they represent

Example: 20

These codes can be found in the **wc_ln_type_cd** lookup table listed at the end of this document.

WC_GNIS_NM

Watercourse GNIS name. The name of the feature as represented within the Geographic Names Information System (GNIS). The USGS is the mandated source of this information. Not all features contained within the coverage will have GNIS names.

Example: Deschutes River

FP_WTRTY_1975_CD

Current Water type Classifications in relation to Forest Practices.

Example: 1

These codes can be found in the **FP_WTRTY_1975_CD** lookup table listed at the end of this document.

FP_WTRTY_1975_DT

The most recent date that a water classification for a stream segment was officially approved by the Department of Natural Resources.

Example 19750101

FP_ WTRTY_CD

Preliminary Fish Habitat Water Type Code. This Code is based on a multi-parameter, field verified geographic information system (GIS) logistic regression model. The water typing model is based on thousands of field surveys of fish presence and fish habitat. Other model parameters are gradient, elevation, basin size and average annual precipitation derived from the US Geological Survey's digital elevation model (DEM) for the state of Washington. Technical considerations required that the model be developed on a "virtual" stream network system derived from the DEM database. The DEM-based model results were then transferred to the DNR's hydrographic GIS map (HYDRO) in order to implement the new water types.

Example: F

These codes can be found in the **FP_WTRTY_CD** lookup table listed at the end of this document.

FP_MDLEXPL_CD

The FP_MDLEXP_CD is used to explain how each stream segment within the WC cover got its new habitat-based water type (FP_WTRTY_CD) value. [See Forest Practices Rules: WAC 222-16-030]. Because not all streams were coded directly as a result of the fish habitat modeling process, an additional coding scheme was needed to distinguish modeled from non-modeled streams and other hydrographic features. For example, an "F " stream with an FP_MDLEXP_CD code of "F1" was modeled as fish habitat because a match was found on the "virtual" DEM-modeled stream network. However, an "F" stream with an FP_MDLEXP_CD of "F2" was not modeled because there was no matching "virtual" stream.

Example: F2

These codes can be found in the **FP_MDLEXPL_CD** lookup table listed at the end of this document.

WBWS.AAT

FNODE#

Arc from node internal number

TNODE#

Arc to node internal number

LPOLY#

Internal identifier of polygon to left of arc.

RPOLY#

Internal identifier of polygon to right of arc.

LENGTH

Arc length, units in Feet.

WBWS#

Arc internal number, software assigned.

WBWS-ID

Arc identifier assigned by user. This item is not used nor is it changed. Presence required by the software.

FP_WTRTY_1975_CD

Current Water type Classifications in relation to Forest Practices.

Example: 1

These codes can be found in the **FP_WTRTY_1975_CD** lookup table listed at the end of this document.

FP_WTRTY_1975_DT

The most recent date that a water classification for a stream segment was officially approved by the Department of Natural Resources.

Example 19750101

WBWS.PAT

AREA

Water body area in Sq. Feet.

PERIMETER

Water body perimeter length in Feet.

WBWS#

Water body region internal number; software assigned.

WBWS-ID

Water body region user-defined ID. This item is not used nor is it changed. Presence required by the software.

WBWS_LLID_NR

Water body longitude/latitude identifier number. The 13-character longitude/latitude derived unique identifier of the water body. All water bodies and islands represented as polygonal features are assigned an identifier. The identifier is based on position of the polygon label point. The identifier code is composed by concatenating the decimal degree values (to four places of precision) of the coordinates (minus the decimal points). LLID numbers are not unique across the four coverages. There is no valid default value for this field and it must be populated.

Example: 1234567890987

WBWS_HYDR_FTR_CD

Water body hydrographic feature code. The code used to describe the hydrographic feature type that the water body polygon represents.

Example: LA

These codes can be found in the **hydr_ftr_cd** lookup table listed at the end of this document.

WBWS_GNIS_NM

Water body GNIS name. The name of the water body as contained within the Geographic Names Information System (GNIS), which is maintained by the USGS. Not all features contained within the coverage will have GNIS names.

Example: Ross Lake

FP_ WTRTY_CD

Features in the WBWS are not part of the habitat-modeling process and are typed according to size. Type S water bodies have an area of at least 20 acres in size. Type F water bodies are less than 20 acres but larger than 0.5 acres. Water bodies less than 0.5 acres are coded "N" unless there is a type S or F stream entering and exiting it. Those water bodies will be coded according to the stream type.

Example: F

These codes can be found in the **FP_WTRTY_CD** lookup table listed at the end of this document. Codes valid for lakes include S, F, N, X

NOTE: Wetlands are not typed in the new habitat-based system. See WAC 222-16-035 for the wetland typing system.

Code Tables

HYDR_FTR_CD (Contains codes for both Water Courses and Water Bodies)

DC	Ditches/canals
ES	Bays, estuaries, and oceans
GL	Glaciers or permanent snowfields
IM	Impoundments
IS	Islands
IW	Impounded wet areas
LA	Lakes/ponds
PP	Pipelines and water conveyance structures
SC	Side channels to rivers or stream
SP	Springs and seeps
ST	Streams and rivers
UN	Unknown or unclassified
WT	Wet areas

WC_LN_TYPE_CD

5	Artificial connector. Watercourse line projected for connectivity purposes (stream short of the shoreline due to scale or subsurface flow)
10	Single. Single-line representing a watercourse segment
20	Interior - in water body. Watercourse interior line represented within a water body (lake, reservoir)
21	Interior - double banked stream. Watercourse interior line represented within a double banked watercourse (Columbia River)
30	Watercourse/body perimeter. Watercourse segment and water body perimeter (stream & marsh bank share the same line)
99	Unknown/Unclassified.

FP_WTRTY_1975_CD

Type 1 Water	All waters, within their ordinary high-water mark, as inventoried as "shorelines of the state" under chapter 90.58 RCW.
Type 2 Water	Segments of natural waters which are not classified as Type 1 Water and have a high fish, wildlife or human use.
Type 3 Water	Segments of natural waters which are not classified as Type 1 or Type 2 Waters and have a moderate to slight fish, wildlife, or human use.
Type 4 Water	All segments of natural waters within the bankfull width of defined channels that are perennial nonfish habitat streams.
Type 5 Water	All segments of natural waters within the bankfull width of defined channels that are not Type 1, 2, 3, or 4 Waters.
Type 9 Water	Unclassified water feature.

FP_ WTRTY_CD

S	Shorelines of the State.
F	Modeled Fish Habitat.
f	Unmodeled stream designated as fish habitat because it occurs downstream of current fish/no fish break point (e.g. type 3/4 break). In some cases of channelized waters and other anomalous hydrographic features, type is based on current code designation (e.g. type 3). The lower case designation is specific to the preview dataset and may not be included the official hydrography database.
N	Modeled Non-fish Habitat designation.
n	Unmodeled stream designated as non-fish habitat because it occurs upstream of current fish/no fish break point (e.g., type 3/4 break). In some cases of channelized waters and other anomalous hydrographic features, type is based on current code designation (e.g. type 4). The lower case designation is specific to the preview dataset and may not be included the official hydrography database.
U	Unknown, Unmodeled hydrographic stream feature, Unable to assigned water type.
X	Mapped hydrographic feature having no water type designation (e.g. pipelines, wet areas, etc).

FP_MDLEXPL_CD

S1	Shorelines Management Act (SMA): Shorelines of the State designation.
F1	Modeled as fish habitat.
F2	Unmodeled. Unable to match DNR's digital stream network in this area with the modeled DEM stream network. Stream segment coded "f" if it is downstream of a current "fish/no fish" break point (e.g. type 3/4 break).
F3	Interior arc of type F water body.
F4	Technical/mapping anomaly. Revised to reflect correct water type: Includes Type 4,5 or 9 downstream of unmodeled type 1,2 or 3 stream segment (downstream cardinality rule); or in cases of some channelized waters, type is based on current code (e.g., type 3).
F5	Override of original model type: fish hatchery or campground diversion.
F6	Stream added after modeled code implementation. Not evaluated for modeled type.
N1	Modeled as non-fish habitat.
N2	1. Unmodeled. Unable to match DNR's digital stream network in this area with the modeled DEM stream network. Stream segment coded as "n" if it was a former type 4 or 5 and occurs above a current fish/no fish break point (e.g. type 3/4 break), or 2. In the preview dataset, it may also be part of a lateral, non-fish habitat stream network that did not have a matching DEM stream.
N3	Interior arc of type N water body.
N4	Technical/mapping anomaly. Original code revised to reflect correct water type. In cases of some channelized waters, type is based on current code (e.g., type 4).
N5	Stream added after model implementation. Not evaluated for modeled type.
N6	Former untyped hydrographic stream feature (" type 9") above modeled end point. May or may not have matching DEM stream.
U1	Unmodeled stream that is currently an untyped stream (old “type” 9).
U2	1. Artificial link that connects a typed stream or stream network to a hydrographic source feature and may, or may not be, an underground flow, or 2. Unable to ascertain water type due to technical/mapping anomaly (e.g., channelized waters with no clear direction and in/out sources).
X1	Mapped hydrographic feature having no water type designation.

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